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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,231	09/08/2005	Reinhard Plaschka	2732-156	8668
6449	7590	08/10/2007		
ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005			EXAMINER GRABOWSKI, KYLE ROBERT	
			ART UNIT 3709	PAPER NUMBER
			NOTIFICATION DATE 08/10/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

Office Action Summary

Application No.

10/521,231

Applicant(s)

PLASCHKA ET AL.

Examiner

Kyle R. Grabowski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/14/2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/14/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Fig. 12: 36. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig 5: 8, Fig 12: 40, 41, and 42. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted

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after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. Claims 16 and 21 recite the limitation "the coating". There is insufficient antecedent basis for this limitation in the claim. Claim 1, on which claims 16 and 21 depend, does not specify a coating.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-5, 10-16, 23-26, 28, 30-33, and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (US 4507346) in view of Heckenkamp (US 4988126).

7. In respect to claims 1-4, 14, and 23, Maurer discloses a multilayer security element including a paper 10 (Fig. 2) and a tangible marking in the form of a relief structure 13 (Fig. 2) that is "burned or discolored in the area of the data in relief" (Col. 8, Lns 25-26) by "absorption of the laser" (Col. 8, Ln 20). Claim 1 does not invoke 35 U.S.C 112 6th paragraph; "means" does not attempt to specify a function.

8. In respect to claims 5, 10-13, and 33, Maurer discloses that the "height of the relief is precisely controlled by adjusting the laser energy" (Clm. 18); this includes controlled specific heights of 30-100 micrometers as well as 30-80 micrometers; the relief, which contains information such as "letters, numbers, patterns, pictures and so on," (Abstract) are shown connected together with regard to content (creating words) 6 (Fig 1); for additional security the document can contain different information in regard to content such as a "congruent inscription of the data in relief" (Col. 5, Lns 54-55).

9. In respect to claims 15 and 16, Maurer discloses a relief structure 44 (Fig 5) partially disposed in a coating 41 and 42 (Fig 3), of which coating cover films 41 and 42 are multilayered.

10. In respect to claims 24-26, 28 and 30-31, a method of “producing an information carrier structure in relief” (Clm. 17) wherein the “height of the relief is precisely controlled by adjusting the laser energy as to its intensity and exposure time” (Clm. 18) is taught in Maurer. Also, “[i]n the process, card inlay 20 (paper substrate) is itself burned or discolored in the area of the data in relief” (Col. 8, Lns 23-26). The cover coating 11 (Fig. 2) is applied before laser inscription (Col. 7, Lns 17-18); the tangible marking 13 is produced in the area of this coating (see Fig. 2). A Nd-YAG laser treatment is preferred (Col. 7, Lns 18-19). The Nd-YAG laser used for security printing is inherently high-speed as is known in the art.

11. Maurer teaches all of the limitations of claims 1-5, 10-16, 23-26, 28, 30-31, and 33, except for the material of the substrate in which the relief is created. The inventive relief taught in Maurer is created in transparent foamable synthetic material disposed directly above the security paper wherein the application in question applies the laser and subsequent relief to the paper substrate itself. Heckenkamp et al. (US 4988126) discloses “relief structures can also be produced directly on the document” by a laser beam (Col. 8, Lns 55-59).

12. In respect to claims 32, 35, and 36, Heckenkamp et al. also explicitly states bank notes and ID cards as examples of his inventive document (Col. 1, Ln 10). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the inventive laser treatment and substrate characteristics taught in Maurer with the less complex inventive surface relief by applying the laser to the paper in view of Heckenkamp et al. to minimize cost and undue complexity; it is also within the

purview of one skilled in the art to apply the inventive document relief onto an ID card or bank note specifically.

13. Claims 7-8 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (US 4507346) and Heckenkamp et al. (US 4988126) as applied to claims 1-5, 10-16, 23-26, 28, 30-33, and 35-36 above, and further in view of Boehm et al (2004/0239097).

14. Maurer discloses a security paper 10 (Fig. 2) and a tangible marking in the form of a relief structure 13 (Fig 2); Heckenkamp et al. discloses creating the relief in the paper substrate. Maurer and Heckenkamp do not disclose the particular makeup of the paper. Boehm discloses "cotton fibers or other fibers from annuals," (Para 0092, Lns 2-3) as well as replacement of "part of said natural fibers by polymer fibers" (Para 0092, Lns 4-5). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to substitute the inventive laser treatment and substrate characteristics taught in Maurer applied directly to the paper substrate taught in Heckenkamp et al. with a annual fiber/plastic composite in view of the of Howland's security paper in order to utilize the high strength and tear resistance of cotton/plastic hybrid fibers.

15. Claims 6, 17-18, 20-22, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (US 4507346) and Heckenkamp et al. (US 4988126) as

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applied to claims 1-4, 9-16, 23-28, 30-33, and 35-36 above, and in further view of Solmsdorf (US 6082778).

16. In respect to claims 6, 17-18, and 20-21, Maurer additionally discloses a security paper 10 (Fig 2) and a tangible marking in the form of a relief structure 13 (Fig 2) having multiple layers. Heckenkamp et al. discloses creating the relief in the paper substrate. Maurer and Heckenkamp et al. do not disclose additives that intensify the color or relief in certain areas, a plastic layer and metal layer with the metal layer removed at least in the area by a laser, nor incorporation of a print into the coating layer. Solmsdorf discloses: a plastic layer 6 (Fig 4), a metal layer 7 (Fig 4), and cavities of removed metal via laser 10 (Fig 4). The plastic layer consists of a "diffraction pattern" (C1m 6). There is a junction between metal foil 7 and card layer 9 (Fig 4); the tangible marking 5b extends beyond the foil/card (Fig 2). Solmsdorf also teaches a transparent cover layer "provided with any desired design print on its surface or back"(Col. 7, Lns 1-2); additives that are "organic or inorganic pigments, colorants or other additives, that cause the laser beam to be more highly absorbed or cause coloring by irradiation with the laser" are also disclosed (Col. 4, Lns. 66-67- Col. 5 Lns. 1-2). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the inventive laser treatment and substrate characteristics taught in Maurer applied directly to the paper substrate taught in Heckenkamp et al. with the copy protection element and additives in view of Solmsdorf in order maximize security by utilizing both features in unison under the same laser.

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17. In respect to claims 19 and 22, Maurer teaches that the “height of the relief is precisely controlled by adjusting the laser energy as to its intensity and exposure time” (CIm. 18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to create a larger metal reduction area relative to the tangible marking by adjusting the laser characteristics to vaporize a particular radius of metal; furthermore, the applicant does not state a purpose or advantage for the transparent border resulting from this treatment.

18. It would have also been obvious to one of ordinary skill in the art at the time the invention was made that a tangible relief marking disposed underneath a printed coating layer as taught in Maurer and Heckenkamp et al. in further view of Solmsdorf will naturally result in an optically variable element i.e. stretching of the printed layer.

19. In respect to claim 29, Maurer teaches a method of “producing an information carrier structure in relief” (CIm. 17) wherein the “height of the relief is precisely controlled by adjusting the laser energy as to its intensity and exposure time” (CIm. 18). Also, “[i]n the process, card inlay 20 (paper substrate) is itself burned or discolored in the area of the data in relief” (Col. 8, Lns 24-26). Maurer does not specify a coating that is a multilayer security element applied by the transfer method. Solmsdorf discloses the identity card 1 with “copy protection element 2 (Fig. 1) applied to the cover layer of the identity card by the transfer method” (Col. 3, Ln 25-26). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the inventive laser treatment and substrate characteristics taught in Maurer applied directly

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to the paper substrate taught in Heckenkamp et al. with a copy protection element in view of Solmsdorf via the transfer method which is well known in the art.

20. Claim 9 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (US 4507346) and Heckenkamp et al. (US 4988126) as applied to claims 1-4, 9-16, 23-26, 28, 30-33, and 35-36 above, and in further view of Adamczyk et al. (US 2004/0050269).


21. Maurer discloses a security paper 10 (Fig 2) and a tangible marking in the form of a relief structure 13 (Fig 2). Maurer does not disclose specific variations in relief structure. While Maurer discloses a method of varying the relief structure heights, he does not disclose specific height variations. Adamczyk et al. discloses characters and/or elements have different relief heights, resulting in a "modulated" surface structure. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the inventive laser treatment and substrate the characteristics taught in Maurer applied directly to the paper substrate taught in Heckenkamp et al. with the varying relief technique taught in Adamczyk et al. to further increase security by making tactile sensations directionally dependent.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle R. Grabowski whose telephone number is (571) 2703-518. The examiner can normally be reached Monday through Thursday and

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every other Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrence R. Till can be reached at (571) 272-1280.

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KG


Terrence R. Till
Supervisory Patent Examiner